

Five new species of the spider genus *Bifurcia* Saaristo, Tu & Li, 2006 (Araneae, Linyphiidae) from Sichuan, China

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Abstract

Five new species of the genus *Bifurcia* are described: *B. kangding* sp. nov. (♂♀), *B. labahe* sp. nov. (♂), *B. luding* sp. nov. (♂♀), *B. shuangqiao* sp. nov. (♂♀), and *B. xiaojin* sp. nov. (♂♀) from western Sichuan, China. A distribution map of the species and illustrations of genital characters are provided in this paper.

Key Words

Biodiversity, micronetine, morphology, sheet-web spiders, taxonomy

Introduction

The spider family Linyphiidae Blackwall, 1859, is the second-largest family in the world, consisting of 4,847 species in 634 genera (WSC 2024). It has a worldwide distribution, but members of the family are found mostly in temperate regions and mountainous regions in the tropics (Murphy and Murphy 2000; Irfan et al. 2022a). Their habitats can range from foliage in the forest canopy to vegetation at eye level, among leaf litter, and under rocks at ground level (Murphy and Murphy 2000; Platnick 2020). Linyphiidae is composed of seven subfamilies: Dubiaraneinae Millidge, 1993; Erigoninae Emerton, 1882; Ipinae Saaristo, 2007; Linyphiinae Blackwall, 1859; Micronetinae Hull, 1920; Mynogleninae Lehtinen, 1967; and Stemonyphantinae Wunderlich, 1986 (Saaristo 2007; Tanasevitch 2024), but such a classification has not been supported by any phylogenetic analyses and seems to be controversial. In Arnedo et al. (2009), the phylogenetic analyses agreed on the monophyly of ‘linyphioids’, Pimoidae Wunderlich, 1986, Linyphiidae, Erigoninae, Mynogleninae, as well as *Stemonyphantes* Menge, 1866, as a basal lineage within Linyphiidae. Wang et al.’s (2015) analyses resulted in seven robustly supported clades within Linyphiidae, but the placements of four deep and

long branches are sensitive to variations in both outgroup and ingroup sampling. Hormiga et al. (2021) confirmed that *Weintrauboa* Hormiga, 2003; *Putaoa* Hormiga & Tu, 2008; *Pecado* Hormiga & Scharff, 2005; and *Stemonyphantes* form a clade (Stemonyphantinae) sister to all remaining linyphiids, and they re-circumscribed Stemonyphantinae. *Bifurcia* Saaristo, Tu & Li, 2006 is classified as Micronetinae (Tanasevitch 2024), but no phylogenetic analysis has ever found Micronetinae to be a monophyletic group. *Bifurcia* comprised ten known species, including four from Russia (south of the Far East) and six from China, stretching from Hebei Province to Sichuan Province (Saaristo et al. 2006; Irfan et al. 2022b; WSC 2024).

Sichuan Province, in the southwest of China, is a biodiversity hotspot with 22 genera and 46 species of linyphiids recorded so far (Tanasevitch 2006; Tu and Li 2006; Song and Li 2010; WSC 2024). Nevertheless, only one species of *Bifurcia*, namely *B. curvata* (Sha & Zhu, 1987), has been recorded from Sichuan Province (Li et al. 1987). In the present study, we describe five new species belonging to *Bifurcia* from western Sichuan (Fig. 1). This region of Sichuan may be characterized as a highland (2,000 to 7,500 meters above sea level), although one of the type localities (Tianquan County) has an elevation of only 600 to 800 meters.

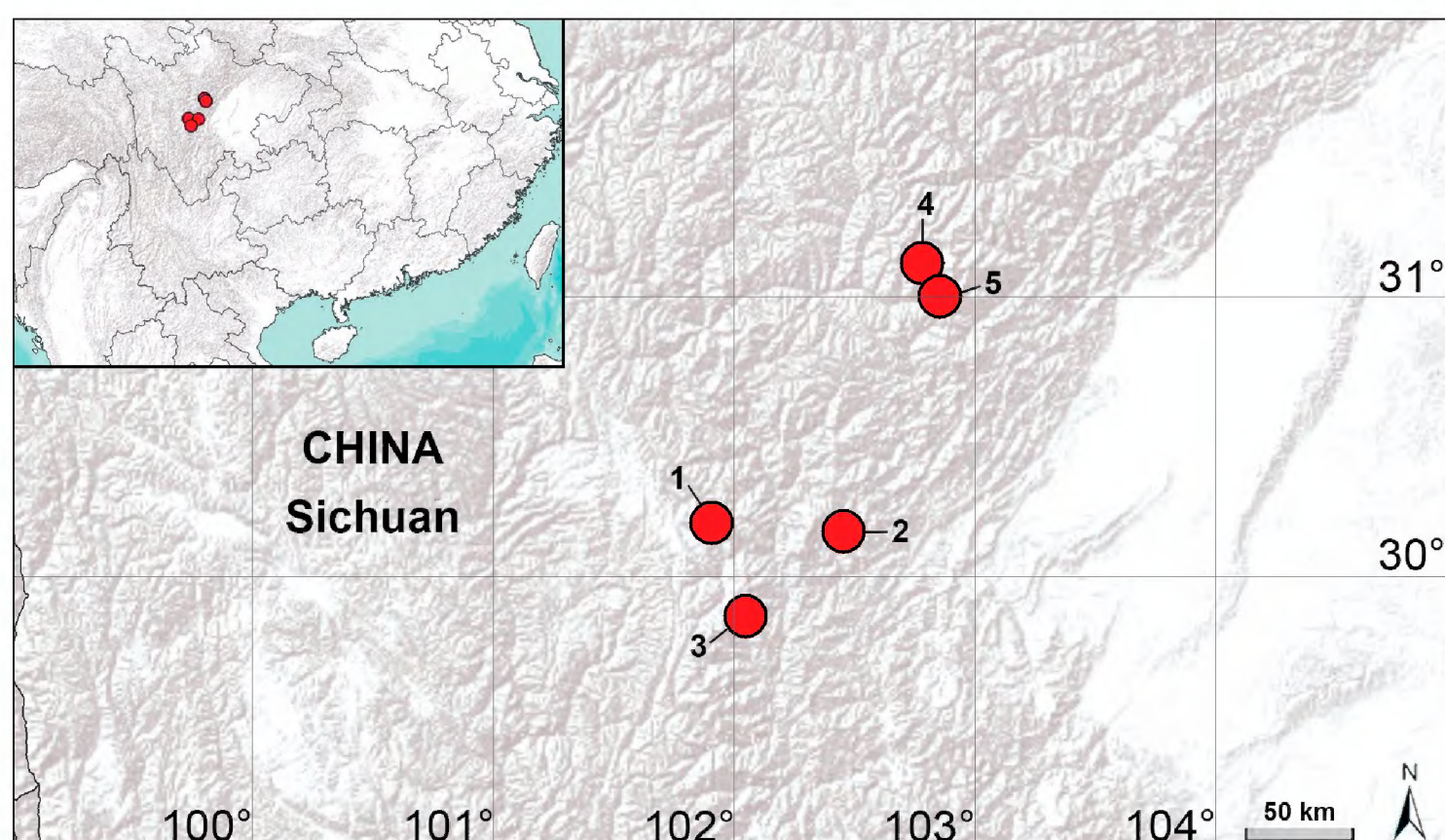


Figure 1. Distribution of the new *Bifurcia* species from Sichuan, China: **1.** *B. kangding* sp. nov.; **2.** *B. labahe* sp. nov.; **3.** *B. luding* sp. nov.; **4.** *B. shuangqiao* sp. nov.; **5.** *B. xiaojin* sp. nov.

Materials and methods

Specimens were examined and measured with a Leica M205 C stereomicroscope. Left palps were photographed. Epigynes in ventral view were photographed before dissection. Epigynes in dorsal view were photographed after being treated with lactic acid to dissolve soft tissues. Images were captured with an Olympus C7070 wide-zoom digital camera (7.1 megapixels) mounted on the stereomicroscope mentioned above and assembled using Helicon Focus v. 6.7.1 image stacking software (Khmelik et al. 2005). All measurements are given in millimeters (mm). Leg measurements are shown as total length (femur, patella, tibia, metatarsus, and tarsus). Leg segments were measured on their dorsal side. The distribution map was generated with ArcGIS v. 10.8 (ESRI Inc.). The specimens studied were preserved in 75% ethanol and deposited in the Institute of Zoology, Chinese Academy of Sciences in Beijing (IZCAS).

Terminology and taxonomic descriptions follow Saaristo et al. (2006). Metatarsal trichobothrium (Tm) is given as the ratio of the distance between the proximal margin of the metatarsus and the root of the trichobothrium divided by the total length of the metatarsus (Denis 1949; Locket and Millidge 1953). The following abbreviations are used:

Somatic morphology: **ALE** = anterior lateral eye; **AME** = anterior median eye; **AME-AME** = distance between AMEs; **AME-ALE** = distance between AME and ALE; **PLE** = posterior lateral eye; **PME** = posterior median eye; **PME-PME** = distance between PME; **PME-PLE** = distance between PME and PLE.

Male palp: **APR** = anterior part of radix; **ATA** = anterior terminal apophysis; **AX** = apex of embolus; **CPM** = chitinized part of median membrane; **E** = embolus; **EP** = embolus proper; **FG** = Fickert's gland; **LE** = lamellar extension of pseudolamella; **MM** = median membrane; **MTA** = median terminal apophysis; **P** = para-

cymbium; **PCA** = proximal cymbial apophysis; **PH** = pit hook on supratégulum; **PL** = pseudolamella; **PTA** = posterior terminal apophysis; **R** = radix; **SPT** = supratégulum; **ST** = subtegulum; **T** = tegulum; **TH** = thumb of embolus.

Epigyne: **BS** = basal part of scape; **DPS** = distal part of scape; **LL** = lateral lobe; **PMP** = posterior median plate; **S** = spermatheca.

Taxonomy

Family Linyphiidae Blackwall, 1859

Genus *Bifurcia* Saaristo, Tu & Li, 2006

Type species. *Arcuphantes ramosus* Li & Zhu, 1987.

The five new species described below are assigned to the genus *Bifurcia* by the following characters: proximal cymbial apophysis (PCA) pointing retrolaterally; bifurcated paracymbium (P); distal part of supratégulum (SPT) large, blunt, and strongly sclerotized in retrolateral view; supratégular pit hook (PH) reduced to small; median membrane (MM) with chitinized basal part (CPM); relatively thick and stout tipped pseudolamella (PL); basal part of scape (BS) nearly T-shaped (Saaristo et al. 2006).

Bifurcia kangding sp. nov.

<https://zoobank.org/BFCA8CFF-92DE-4C0F-97B3-5A27552EA929>

Figs 2–4, 16A, D

Type material. *Holotype* ♂ (IZCAS-Ar44925) and *paratypes* 1♂2♀ (IZCAS-Ar44926–28), Mugecuo Scenic Area (30°11.72'N, 101°54.43'E, 3760 m elev.), Wangmu Village, Yala Town, Kangding, Garze Tibetan Autonomous Prefecture, **Sichuan, China**, 14/07/2004, Lihong Tu leg.

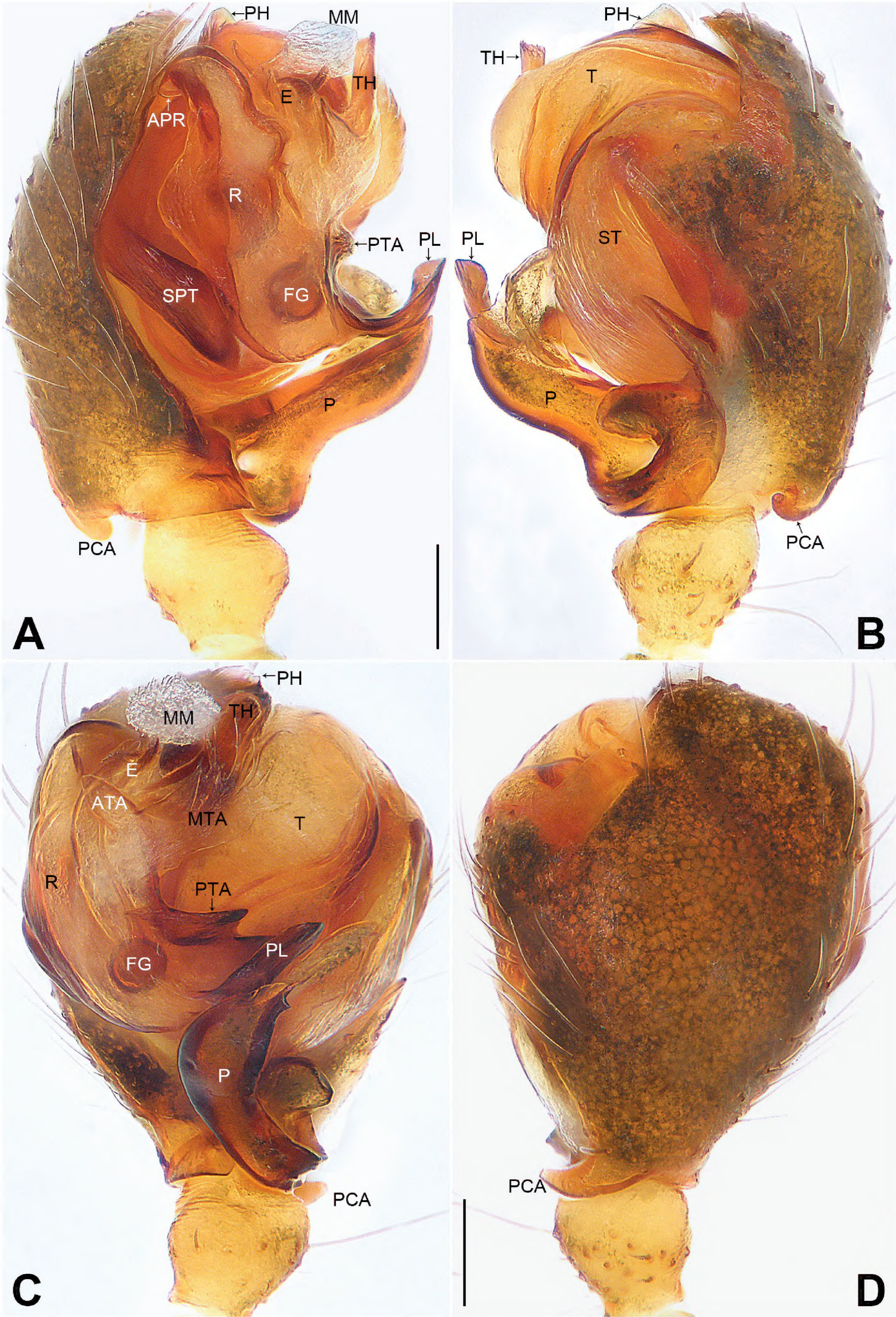


Figure 2. *Bifurcia kangding* sp. nov., holotype male palp: **A.** Prolateral view; **B.** Retrolateral view; **C.** Ventral view; **D.** Dorsal view. Scale bars: 0.10 mm (A–D).

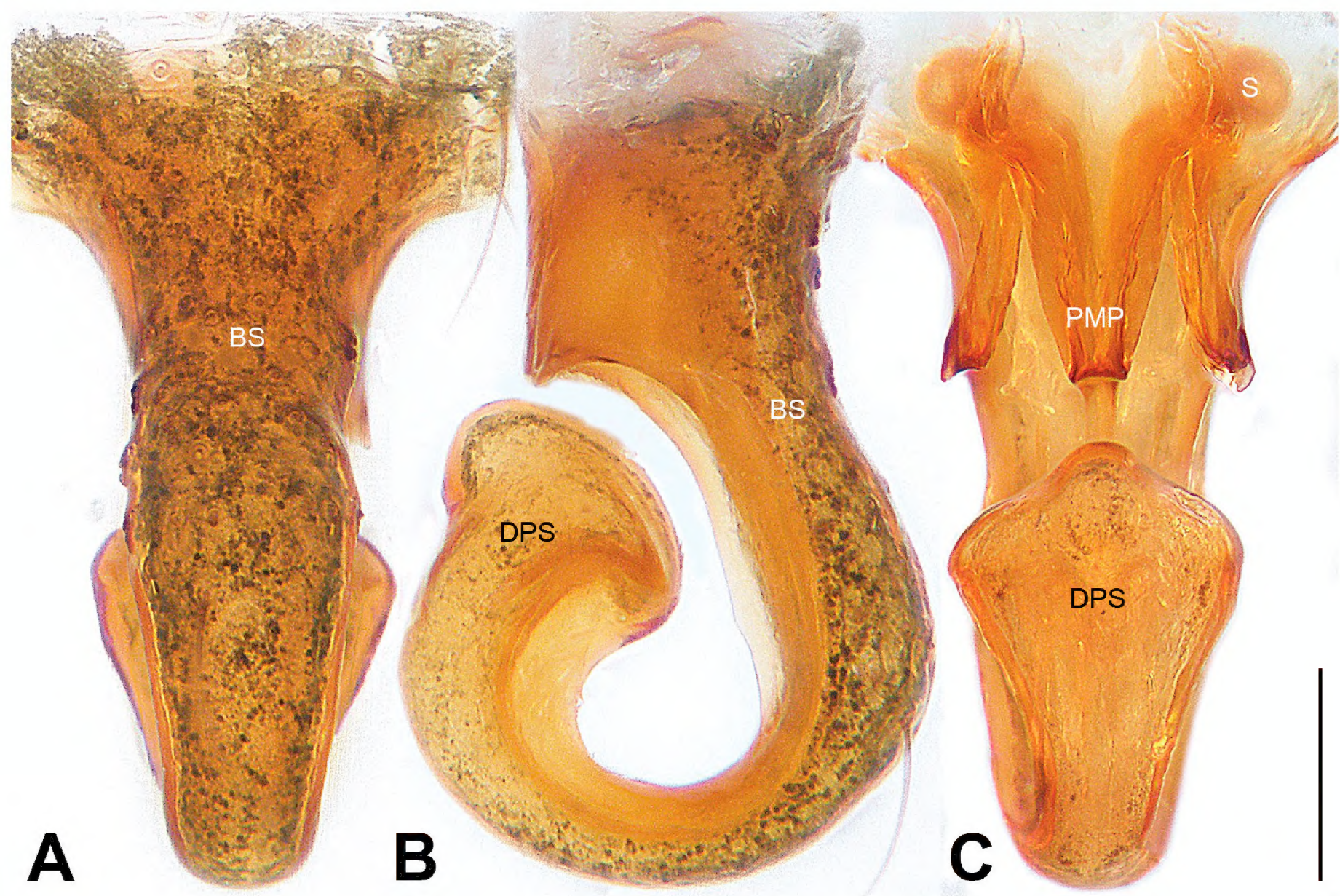


Figure 3. *Bifurcia kangding* sp. nov., paratype female epigyne: **A.** Ventral view; **B.** Lateral view; **C.** Dorsal view. Scale bar: 0.10 mm (A–C).

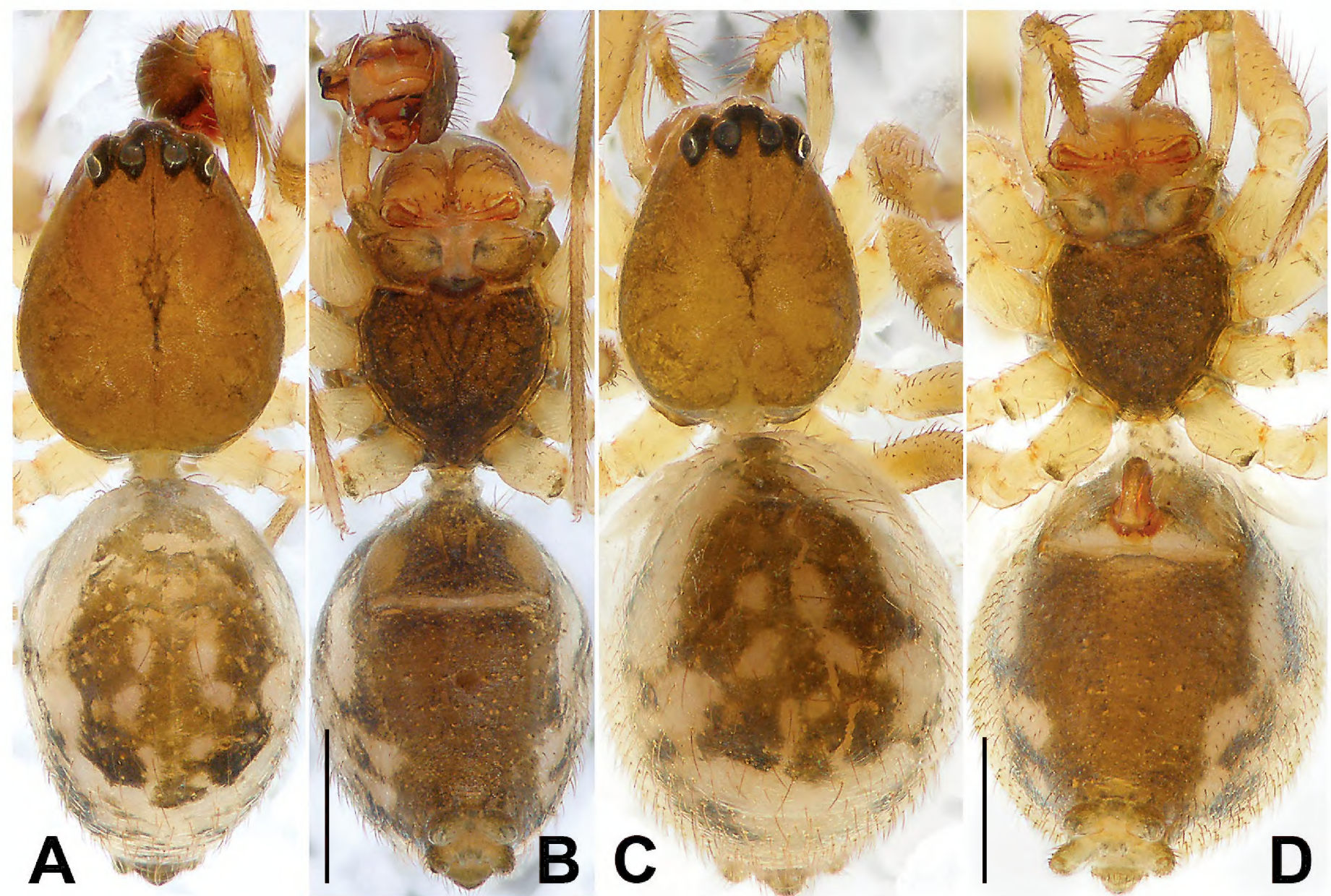


Figure 4. *Bifurcia kangding* sp. nov., holotype male (**A, B**) and paratype female (**C, D**) habitus: **A, C.** Dorsal view; **B, D.** Ventral view. Scale bars: 0.50 mm (A–D).

Etymology. The specific name refers to the type locality; noun in apposition.

Diagnosis. The new species resembles *B. xiaojin* sp. nov. with similar paracymbium (P) and epigyne (Figs 2B, 3A), but can be easily distinguished by embolus thumb (TH) with dentate end (Figs 2B, 16D vs. spinous, Figs 13B, 16J), by chitinized basal part of median membrane (CPM) small with tip end (Fig. 16A vs. finger-shaped, Fig. 16H), and by spermathecae (S) separated by diameter less than their inter-distance (Fig. 3C vs. inter-distance less than their diameter, Fig. 14C).

Description. Male (holotype). Total length: 2.12, carapace 0.92 long, 0.74 wide, abdomen 1.30 long, 0.80 wide. Eye inter-distances and diameters: AME 0.06, AME-AME 0.03, ALE 0.08, AME-ALE 0.06, PME 0.08, PME-PME 0.05, PLE 0.07, and PME-PLE 0.06. Sternum 0.54 long, 0.52 wide. Clypeus 0.12 high. Chelicerae promargin with 3 teeth, retromargin with 4 teeth. Length of legs: I 5.50 (1.54, 0.28, 1.44, 1.34, 0.90), II 4.90 (1.26, 0.26, 1.44, 1.14, 0.80), III 3.10 (0.78, 0.22, 0.76, 0.76, 0.58), IV 4.44 (1.24, 0.24, 1.12, 1.10, 0.74). Leg formula: I-II-IV-III. TmI 0.16, TmIV absent. Tibial spine formula: 2-2-2-2. Carapace brown. Sternum dark brown. Abdomen with greenish gray dorsal spots (Fig. 4A, B).

Palp (Fig. 2). Patella with long dorsal bristle. Tibia unmodified. Cymbium with hook-shaped proximal apophysis (PCA) pointing retrolaterally. Paracymbium (P) bifurcate with three branches: distally triangular branch, sharp-pointed branch and lower sclerotized branch. Pit hook (PH) on stout distal part of suprategulum (SPT) extremely reduced to small outgrowth. Embolic division (Fig. 16A, D): anterior part of radix (APR) hook-shaped; sperm duct inside the radix (R) inconspicuous with Fickert's gland (FG); pseudolamella (PL) strongly sclerotized and lamellar extension (LE) absent. Anterior terminal apophysis (ATA) short-pointing anterodorsally; median terminal apophysis (MTA) membranous with many slender branches; posterior terminal apophysis (PTA) with serrated margin. Embolus (E) with short basal part, apical part with conical embolus proper (EP), L-shaped thumb (TH), and sharp apex (AX). Median membrane (MM) leaf-shaped with numerous papillae, and basal part of median membrane chitinized (CPM).

Female (paratype). Total length: 2.42, carapace 0.94 long, 0.72 wide, abdomen 1.48 long, 1.10 wide. Eye inter-distances and diameters: AME 0.05, AME-AME 0.02, ALE 0.07, AME-ALE 0.05, PME 0.07, PME-PME 0.05, PLE 0.08, and PME-PLE 0.04. Sternum 0.56 long, 0.52 wide. Clypeus 0.12 high. Chelicerae promargin with 3 teeth, retromargin with 5 teeth. Length of legs: I 5.28 (1.44, 0.32, 1.34, 1.30, 0.88), II 4.74 (1.32, 0.30, 1.18, 1.14, 0.80), III 3.38 (1.02, 0.30, 0.80, 0.72, 0.54), IV 4.36 (1.26, 0.30, 1.06, 1.06, 0.68). Leg formula: I-II-IV-III. TmI 0.15, TmIV absent. Tibial spine formula: 2-2-2-2. Coloration generally as in male (Fig. 4C, D).

Epigyne (Fig. 3). Basal part of scape (BS) nearly T-shaped. Posterior part of posterior median plate (PMP)

M-shaped. Distal part of scape (DPS) forming a circle with basal part of scape. Spermathecae (S) round.

Distribution. China (Sichuan, type locality; Fig. 1).

Bifurcia labahe sp. nov.

<https://zoobank.org/0C7C6235-50F6-4DAE-B2AB-C1B996ACE792>

Figs 5, 6, 16B, E

Type material. Holotype ♂ (IZCAS-Ar44929), Labahe Nature Reserve (30°9.89'N, 102°27.24'E), Tianquan County, Ya'an, Sichuan, China, 10/07/2004, Lihong Tu leg.

Etymology. The specific name refers to the type locality; noun in apposition.

Diagnosis. The species resembles *B. kangding* sp. nov. with similar pseudolamella (PL) and median membrane (MM) (Fig. 16B, E), but can be easily distinguished by thumb of embolus (TH) 0.6 times radix (R) length (Figs 5A, 16B vs. 0.3, Figs 2A, 16A), by anterior part of radix (APR) round (Fig. 16E vs. hooked, Fig. 16D), by median terminal apophysis (MTA) with jagged edge (Fig. 16B vs. branched, Fig. 16A), and by posterior terminal apophysis (PTA) thick and 0.7 times pseudolamella (PL) length (Fig. 16B vs. thin and 0.2, Fig. 16A).

Description. Male (holotype). Total length: 2.24, carapace 1.06 long, 0.96 wide, abdomen 1.18 long, 0.78 wide. Eye inter-distances and diameters: AME 0.05, AME-AME 0.02, ALE 0.09, AME-ALE 0.06, PME 0.06, PME-PME 0.07, PLE 0.09, and PME-PLE 0.05. Sternum 0.61 long, 0.45 wide. Clypeus 0.08 high. Chelicerae promargin with 2 teeth, retromargin with 1 tooth. Length of legs: I 7.00 (1.84, 0.34, 1.92, 1.80, 1.10), II 5.80 (1.64, 0.28, 1.62, 1.44, 0.82), III 4.34 (1.27, 0.27, 1.08, 1.09, 0.63), IV 5.70 (1.68, 0.28, 1.54, 1.48, 0.72). Leg formula: I-II-IV-III. TmI 0.17, TmIV absent. Tibial spine formula: 2-2-2-2. Carapace brown. Sternum dark brown. Abdomen with greenish gray dorsal spots (Fig. 6).

Palp (Fig. 5). Patella with long dorsal bristle. Tibia unmodified. Cymbium with hook-shaped proximal apophysis (PCA) pointing retrolaterally. Paracymbium (P) bifurcate with three branches: mushroom-shaped branch and two short branches proximally. Pit hook (PH) on stout distal part of suprategulum (SPT) extremely reduced to small outgrowth. Embolic division (Fig. 16B, E): anterior part of radix (APR) round; sperm duct inside the radix (R) inconspicuous with Fickert's gland (FG); pseudolamella (PL) smooth and pointed; lamellar extension (LE) absent. Anterior terminal apophysis (ATA) short; median terminal apophysis (MTA) board; posterior terminal apophysis (PTA) thick with dentate anterior margin. Embolus (E) with conical embolus proper (EP), large thumb (TH), and apex (AX). Median membrane (MM) round with numerous papillae, and basal part of median membrane chitinized (CPM).

Female. Unknown.

Distribution. China (Sichuan, type locality; Fig. 1).

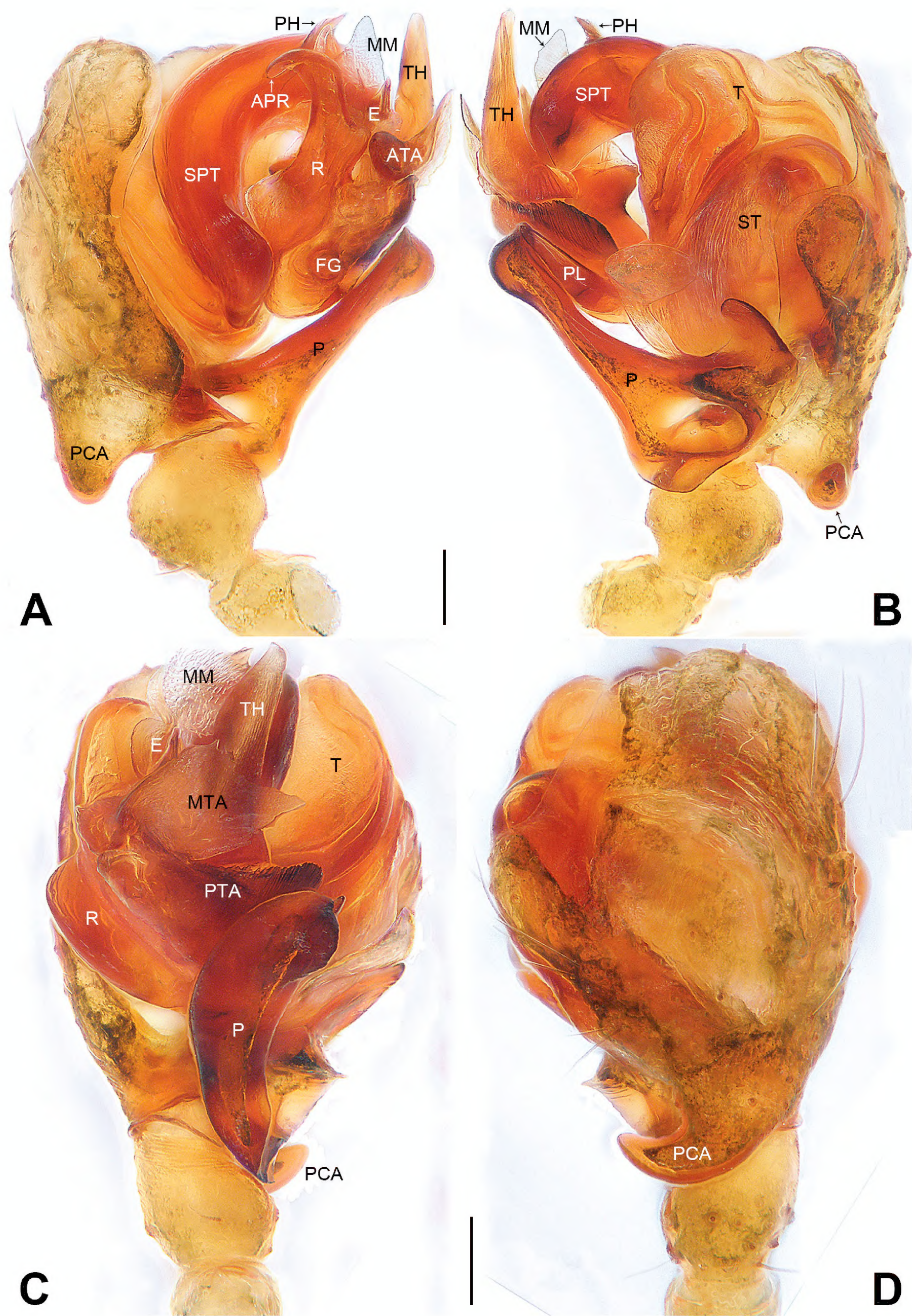


Figure 5. *Bifurcia labahe* sp. nov., holotype male palp: **A.** Prolateral view; **B.** Retrolateral view; **C.** Ventral view; **D.** Dorsal view. Scale bars: 0.10 mm (A–D).



Figure 6. *Bifurcia labahe* sp. nov., holotype male habitus: **A.** Dorsal view; **B.** Ventral view. Scale bar: 0.50 mm (**A, B**).

***Bifurcia luding* sp. nov.**

<https://zoobank.org/3031952B-E440-40FB-8DB8-A68AC1D35336>

Figs 7–9, 16C, F

Type material. *Holotype* ♂ (IZCAS-Ar44930) and *paratype* 1 ♀ (IZCAS-Ar44931), Luding County (29°51.60'N, 102°2.83'E, 2936 m elev.), Garze Tibetan Autonomous Prefecture, **Sichuan, China**, 20/07/2004, Lihong Tu leg.

Etymology. The specific name refers to the type locality; noun in apposition.

Diagnosis. The new species can be easily distinguished from other congeners by having embolus apex (AX) that is curved and distally pointed (Fig. 16C vs. angular, column-shaped, distally blunt, Fig. 16A, B, G, H, Saaristo et al. 2006: figs 4, 12), by embolus thumb (TH) membranous (Figs 7C, 16C vs. sclerotized, Figs 2C, 5C, 13C, 16A, B, G, H), by lamellar extension of pseudolamella (LE) with flower-shaped distal end (Figs 7C, 16C vs. lacking LE or LE ribbon-shaped, Figs 2C, 5C, 10C, 13C, 16A, B, G, H, Saaristo et al. 2006: figs 4, 12), and by basal part of scape (BS) shield-shaped (Fig. 8A vs. T-shaped, Figs 3A, 11A, 14A, Saaristo et al. 2006: figs 6, 14).

Description. Male (holotype). Total length: 2.23, carapace 1.10 long, 0.90 wide, abdomen 1.12 long, 0.74 wide. Eye inter-distances and diameters: AME 0.06, AME-AME 0.02, ALE 0.07, AME-ALE 0.06, PME 0.08, PME-PME 0.05, PLE 0.07, and PME-PL 0.06. Sternum

0.50 long, 0.48 wide. Clypeus 0.11 high. Chelicerae promargin with 4 teeth, retromargin with 4 teeth. Length of legs: I 7.57 (1.98, 0.33, 1.96, 2.00, 1.30), II 6.78 (1.90, 0.32, 1.70, 1.74, 1.12), III 4.78 (1.38, 0.30, 1.10, 1.24, 0.76), IV 6.28 (1.84, 0.32, 1.58, 1.62, 0.92). Leg formula: I-II-IV-III. TmI 0.16, TmIV absent. Tibial spine formula: 2-2-2-2. Carapace yellowish. Sternum dark brown. Abdomen with greenish gray dorsal spots (Fig. 9A, B).

Palp (Fig. 7). Patella with long dorsal bristle. Tibia unmodified. Cymbium with hook-shaped proximal apophysis (PCA) pointing retrolaterally. Paracymbium (P) bifurcate with three branches: S-shaped branch, finger-shaped branch and lower branch. Pit hook (PH) on stout distal part of suprategulum (SPT) extremely reduced to small outgrowth. Embolic division (Fig. 16C, F): anterior part of radix (APR) hook-shaped; sperm duct inside the radix (R) inconspicuous with Fickert's gland (FG); pseudolamella (PL) strongly sclerotized; and lamellar extension (LE) slightly sclerotized with flower-shaped distal end. Anterior terminal apophysis (ATA) longer than wide; median terminal apophysis (MTA) membranous with serrated margin; posterior terminal apophysis (PTA) small and semicircle. Embolus (E) with conical embolus proper (EP), indistinct thumb (TH), and hooked apex (AX). Median membrane (MM) fan-shaped and small chitinated basal part of median membrane (CPM).

Female (paratype). Total length: 2.53, carapace 0.96 long, 0.84 wide, abdomen 1.66 long, 1.16 wide.

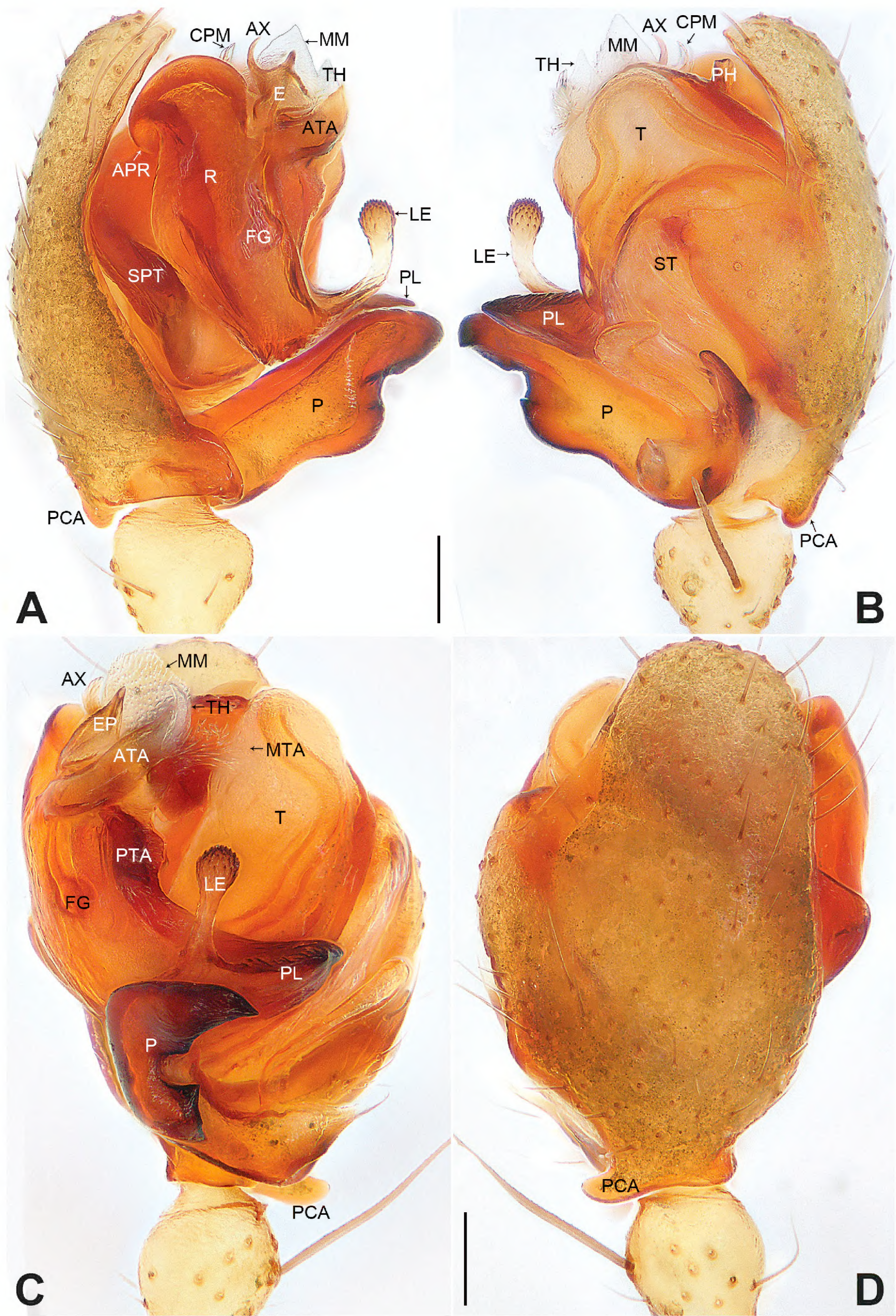


Figure 7. *Bifurcia luding* sp. nov., holotype male palp: **A.** Prolateral view; **B.** Retrolateral view; **C.** Ventral view; **D.** Dorsal view. Scale bars: 0.10 mm (A–D).

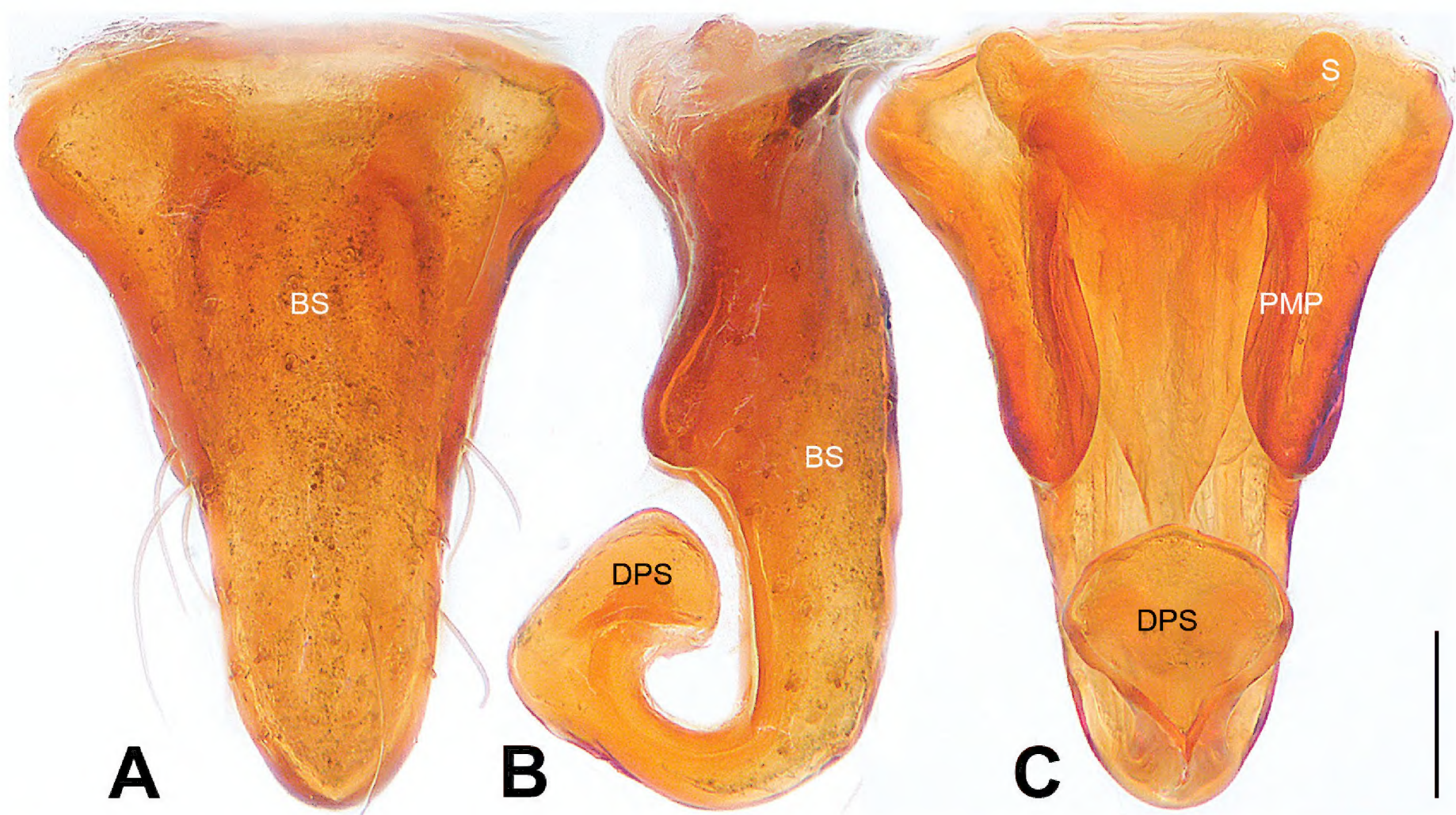


Figure 8. *Bifurcia luding* sp. nov., paratype female epigyne: **A.** Ventral view; **B.** Lateral view; **C.** Dorsal view. Scale bar: 0.10 mm (A–C).

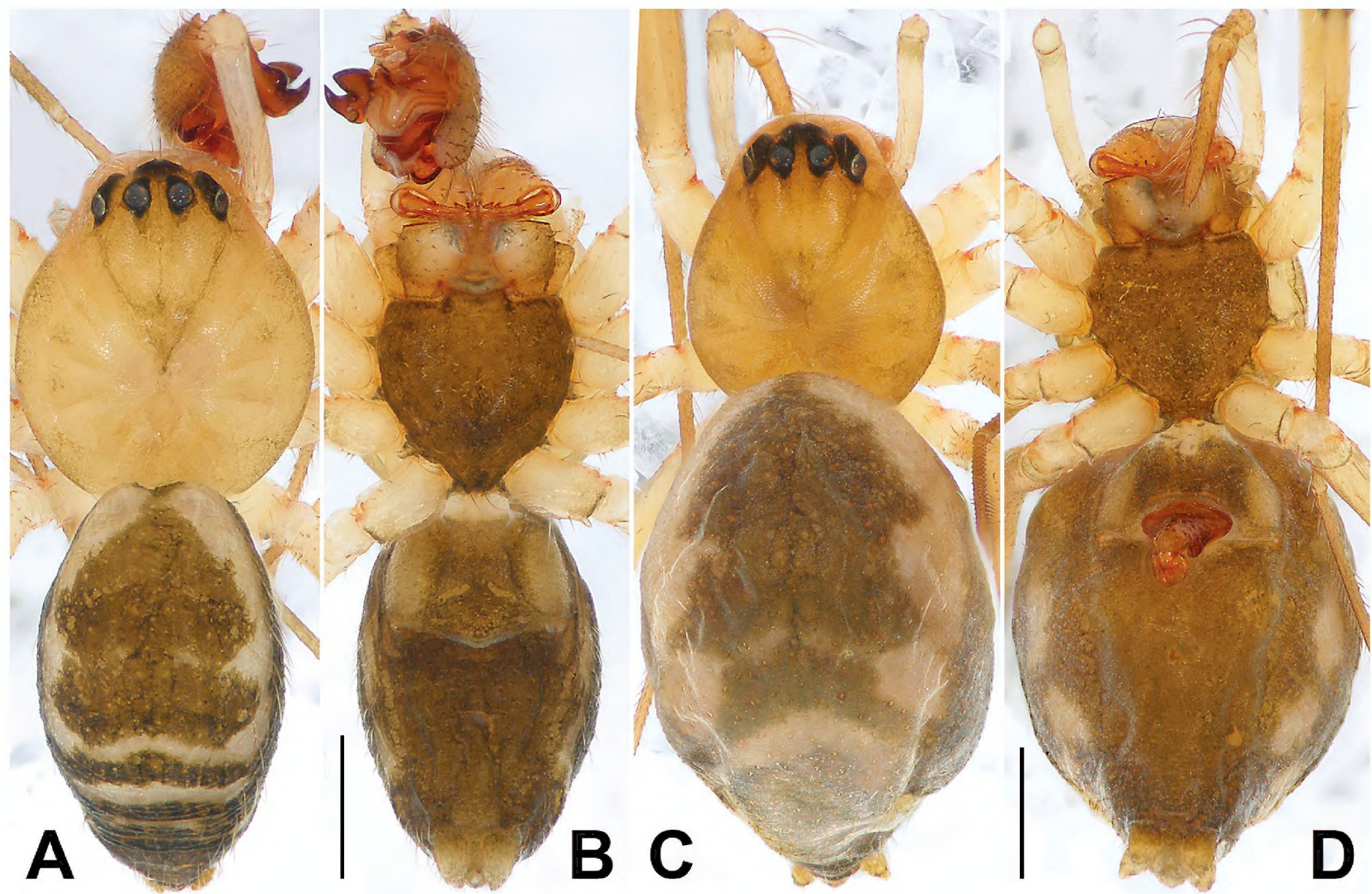


Figure 9. *Bifurcia luding* sp. nov., holotype male (**A**, **B**) and paratype female (**C**, **D**) habitus: **A**, **C.** Dorsal view; **B**, **D.** Ventral view. Scale bars: 0.50 mm (A–D).

Eye inter-distances and diameters: AME 0.06, AME-AME 0.02, ALE 0.09, AME-ALE 0.06, PME 0.09, PME-PME 0.06, PLE 0.07, and PME-PLE 0.06. Sternum 0.66 long, 0.56 wide. Clypeus 0.09 high. Chelicerae promargin with 3 teeth, retromargin with 5 teeth. Length of legs:

I 7.01 (1.82, 0.36, 1.92, 1.80, 1.11), II 6.27 (1.74, 0.32, 1.63, 1.56, 1.02), III 4.62 (1.42, 0.28, 1.14, 1.10, 0.68), IV 5.90 (1.78, 0.30, 1.50, 1.46, 0.86). Leg formula: I-II-IV-III. TmI 0.16, TmIV absent. Tibial spine formula: 2-2-2-2. Coloration generally as in male (Fig. 9C, D).

Epigyne (Fig. 8). Basal part of scape (BS) shield-shaped. Both sides of posterior median plate (PMP) developed well. Distal part of scape (DPS) forming an incomplete circle with basal part of scape. Spermathecae (S) nearly elliptic.

Distribution. China (Sichuan, type locality; Fig. 1).

***Bifurcia shuangqiao* sp. nov.**

<https://zoobank.org/8B4565AA-8C81-4F24-B83D-9067D2795EB4>

Figs 10–12, 16G, I

Type material. *Holotype* ♂ (IZCAS-Ar44932) and *paratype* 1 ♀ (IZCAS-Ar44933), Shuangqiaogou (31°7.34'N, 102°46.71'E), Siguniangshan National Scenic Area, Siguniangshan Town, Xiaojin County, Aba Tibetan and Qiang Autonomous Prefecture, **Sichuan, China**, 02/08/2004, Lihong Tu leg.

Etymology. The specific name refers to the type locality; noun in apposition.

Diagnosis. The new species resembles *B. curvata* (Sha & Zhu, 1987) (Saaristo et al. 2006: figs 9–17) with similar large chitinized basal part of median membrane (CPM) and epigyne (Figs 10B, 11A, 16G, I), but can be distinguished by embolus with hooked apex (AX) (Fig. 16G vs. sharp, Saaristo et al. 2006: fig. 12), by anterior terminal apophysis (ATA) finger-shaped (Figs 10A, 16G vs. handle-shaped, Saaristo et al. 2006: figs 11, 12), by lamellar extension of pseudolamella (LE) absent (Figs 10C, 16G vs. present and ribbon-shaped, Saaristo et al. 2006: figs 10, 12), and by posterior part of posterior median plate (PMP) straight (Fig. 11C vs. curved, Saaristo et al. 2006: fig. 17).

Description. Male (holotype). Total length: 1.78, carapace 0.88 long, 0.78 wide, abdomen 0.89 long, 0.62 wide. Eye inter-distances and diameters: AME 0.05, AME-AME 0.02, ALE 0.08, AME-ALE 0.06, PME 0.08, PME-PME 0.04, PLE 0.08, and PME-PLE 0.04. Sternum 0.53 long, 0.51 wide. Clypeus 0.12 high. Chelicerae promargin with 3 teeth, retromargin with 4 teeth. Length of legs: I 5.43 (1.41, 0.28, 1.48, 1.34, 0.92), II 4.63 (1.24, 0.26, 1.21, 1.14, 0.78), III 3.42 (0.97, 0.22, 0.80, 0.83, 0.60), IV 4.47 (1.33, 0.25, 1.13, 1.06, 0.70). Leg formula: I-II-IV-III. TmI 0.15, TmIV absent. Tibial spine formula: 2-2-2-2. Carapace yellowish-brown. Sternum dark brown. Abdomen with greenish gray dorsal spots (Fig. 12A, B).

Palp (Fig. 10). Patella with long dorsal bristle. Tibia unmodified. Cymbium with hook-shaped proximal apophysis (PCA) pointing retrolaterally. Paracymbium (P) bifurcate with three branches: proximally short branch, medianly robust branch with round lateral branch and distal branch. Pit hook (PH) on stout distal part of supratégulum (SPT) extremely reduced to small outgrowth. Embolic division (Fig. 16G, I): anterior part of radix (APR) hook-shaped; sperm duct inside the radix (R) inconspicuous with Fickert's gland (FG); pseudolamella (PL) strongly sclerotized and lamellar extension (LE) absent. Anterior terminal apophysis (ATA) extending out handle-shaped tip pointing anterodorsally; median terminal apophysis (MTA) membranous with serrated margin; posterior terminal apophy-

sis (PTA) rectangular and strongly sclerotized. Embolus (E) with conical embolus proper (EP), sclerotized thumb (TH), and hooked apex (AX). Median membrane (MM) with large chitinized basal part (CPM).

Female (paratype). Total length: 1.86, carapace 0.95 long, 0.80 wide, abdomen 0.94 long, 1.33 wide. Eye inter-distances and diameters: AME 0.04, AME-AME 0.02, ALE 0.09, AME-ALE 0.05, PME 0.08, PME-PME 0.05, PLE 0.08, and PME-PLE 0.04. Sternum 0.60 long, 0.56 wide. Clypeus 0.10 high. Chelicerae promargin with 3 teeth, retromargin with 5 teeth. Length of legs: I 5.37 (1.48, 0.33, 1.44, 1.28, 0.84), II 4.79 (1.33, 0.31, 1.22, 1.13, 0.80), III 3.70 (1.10, 0.26, 0.88, 0.86, 0.60), IV 4.69 (1.42, 0.27, 1.19, 1.11, 0.70). Leg formula: I-II-IV-III. TmI 0.17, TmIV absent. Tibial spine formula: 2-2-2-2. Coloration generally as in male (Fig. 12C, D).

Epigyne (Fig. 11). Basal part of scape (BS) sparsely clothed with long curved hairs, turned under basal part forming large circle. Posterior part of posterior median plate (PMP) curved. Distal part of scape (DPS) T-shaped, laterally directed lateral lobes (LL) extending out of either side in ventral view. Spermathecae (S) S-shaped.

Distribution. China (Sichuan, type locality; Fig. 1).

***Bifurcia xiaojin* sp. nov.**

<https://zoobank.org/7136AE47-587C-47F6-9951-588B3337E324>

Figs 13–15, 16H, J

Type material. *Holotype* ♂ (IZCAS-Ar44934) and *paratypes* 2 ♂ 3 ♀ (IZCAS-Ar44935–39), Changpinggou (31°0.29'N, 102°51.16'E), Siguniangshan National Scenic Area, Siguniangshan Town, Xiaojin County, Aba Tibetan and Qiang Autonomous Prefecture, **Sichuan, China**, 01/08/2004, Lihong Tu leg.

Etymology. The specific name refers to the type locality; noun in apposition.

Diagnosis. The new species resembles *B. kangding* sp. nov. with similar paracymbium (P) and epigyne (Figs 13B, 14A), but can be distinguished by embolus thumb (TH) with spinous end (Figs 13C, 16H vs. dentate, Figs 2C, 16A), by chitinized basal part of median membrane (CPM) finger-shaped (Fig. 16H vs. pointed, Fig. 16A), and by spermathecae (S) close to each other (Fig. 14C vs. widely separated, Fig. 3C).

Description. Male (holotype). Total length: 2.12, carapace 1.01 long, 0.99 wide, abdomen 1.11 long, 0.81 wide. Eye inter-distances and diameters: AME 0.05, AME-AME 0.02, ALE 0.06, AME-ALE 0.08, PME 0.06, PME-PME 0.06, PLE 0.07, and PME-PLE 0.08. Sternum 0.55 long, 0.53 wide. Clypeus 0.15 high. Chelicerae promargin with 2 teeth, retromargin with 1 tooth. Length of legs: I 5.49 (1.45, 0.31, 1.46, 1.38, 0.89), II 4.51 (1.22, 0.28, 1.17, 1.10, 0.74), III 3.29 (0.94, 0.25, 0.75, 0.77, 0.58), IV 4.34 (1.27, 0.27, 1.06, 1.02, 0.72). Leg formula: I-II-IV-III. TmI 0.17, TmIV absent. Tibial spine formula: 2-2-2-2. Carapace brown. Sternum dark brown. Abdomen with greenish gray dorsal spots (Fig. 15A, B).

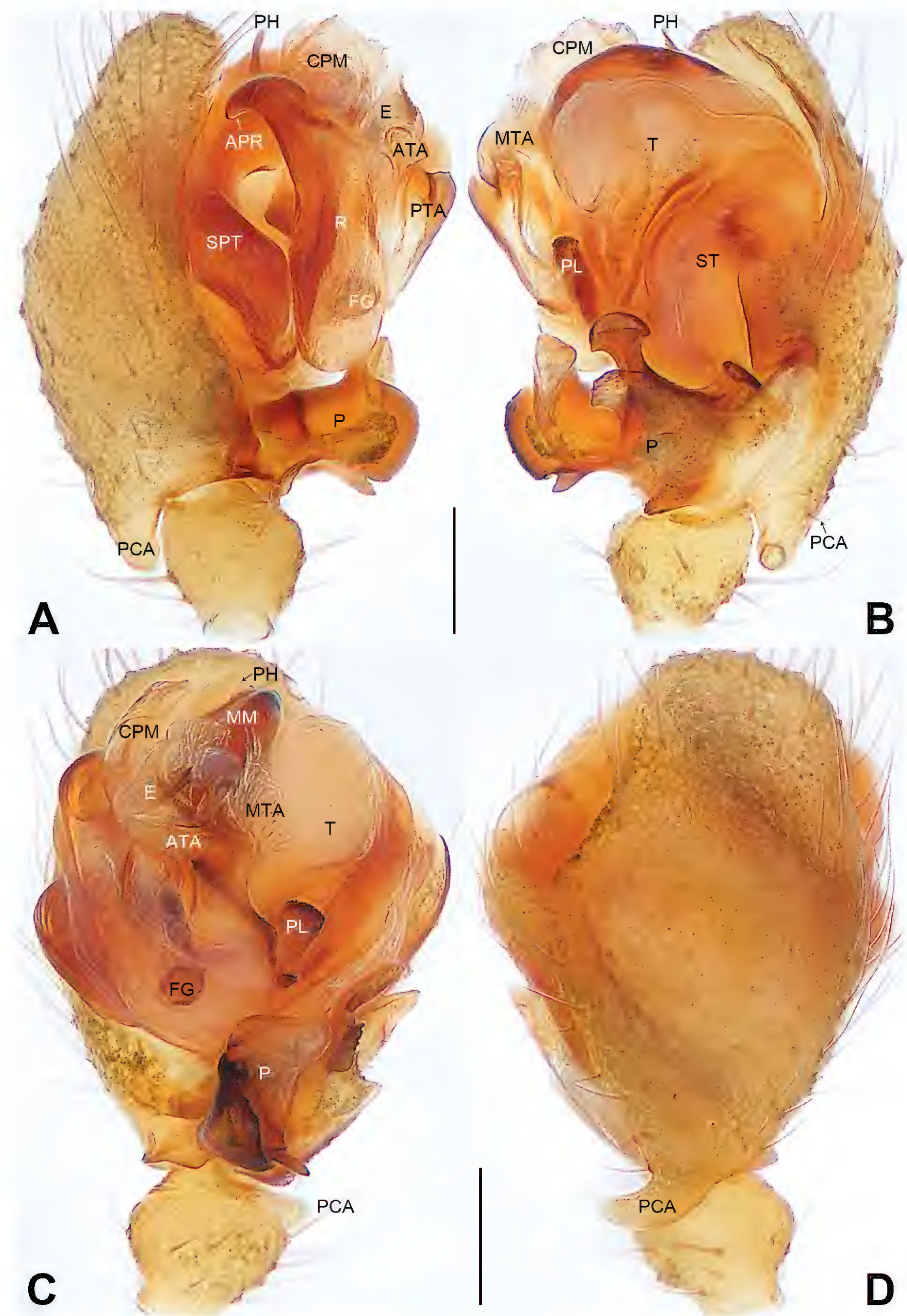


Figure 10. *Bifurcia shuangqiao* sp. nov., holotype male palp: **A.** Prolateral view; **B.** Retrolateral view; **C.** Ventral view; **D.** Dorsal view. Scale bars: 0.10 mm (A–D).

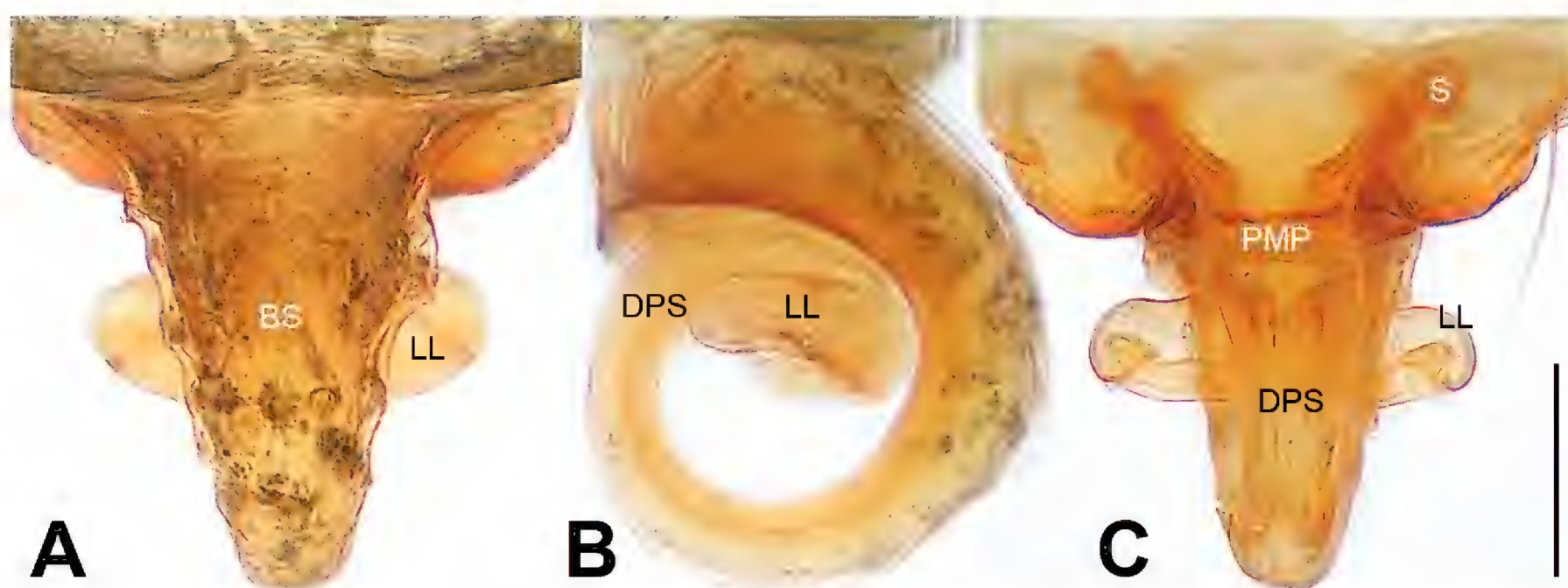


Figure 11. *Bifurcia shuangqiao* sp. nov., paratype female epigyne: **A.** Ventral view; **B.** Lateral view; **C.** Dorsal view. Scale bar: 0.10 mm (A–C).

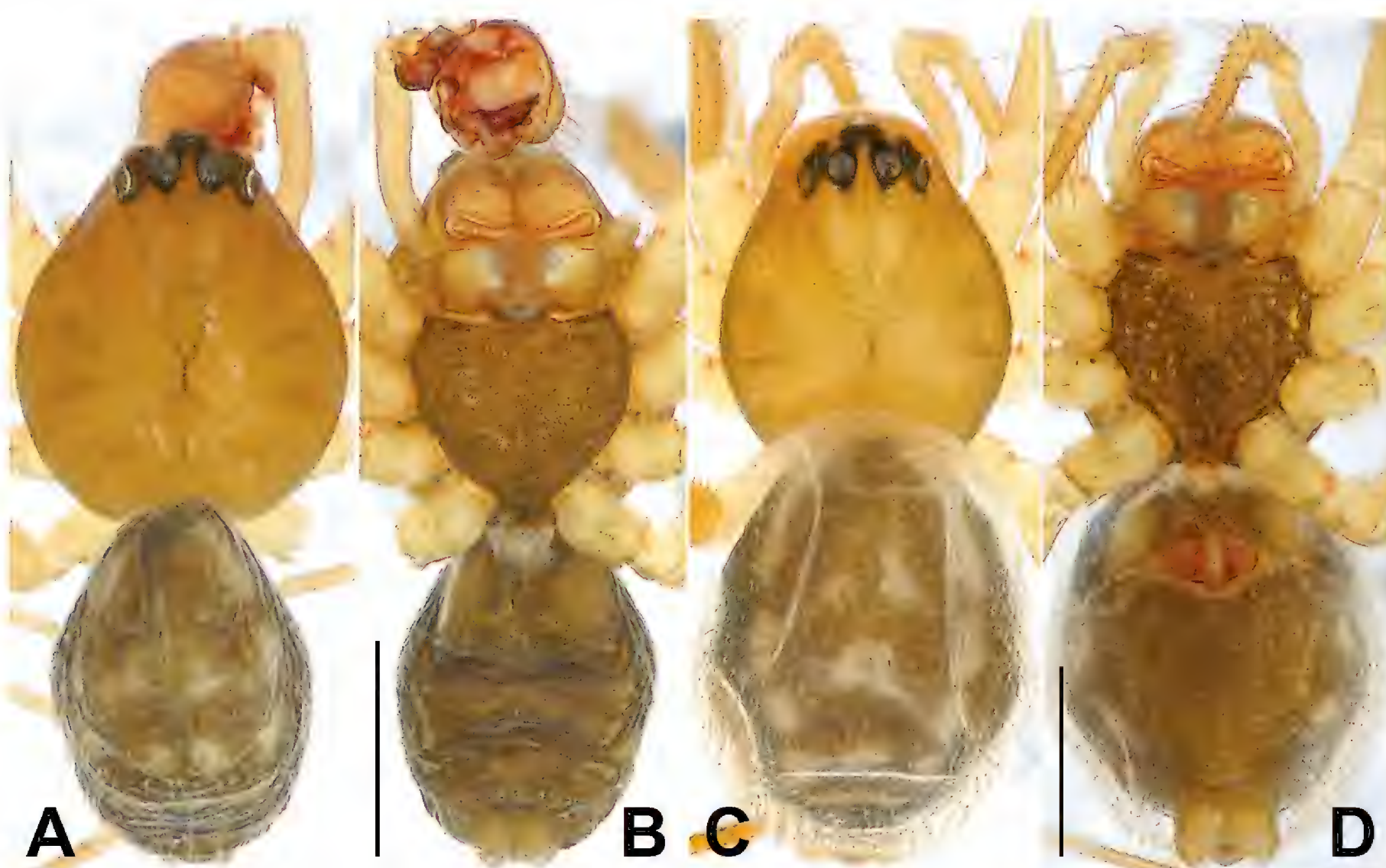


Figure 12. *Bifurcia shuangqiao* sp. nov., holotype male (**A, B**) and paratype female (**C, D**) habitus: **A, C.** Dorsal view; **B, D.** Ventral view. Scale bars: 0.50 mm (A–D).

Palp (Fig. 13). Patella with long dorsal bristle. Tibia unmodified. Cymbium with hook-shaped proximal apophysis (PCA) pointing retrolaterally. Paracymbium (P) bifurcate with three curved branches. Pit hook (PH) on stout distal part of suprategulum (SPT) extremely reduced to small outgrowth. Embolic division (Fig. 16H, J): anterior part of radix (APR) hook-shaped; sperm duct inside the radix (R) inconspicuous with Fickert's gland (FG); pseudolamella (PL) strongly sclerotized, with distally angular end and lamellar extension (LE) absent. Anterior terminal apophysis (ATA) pointing anterodorsally; median terminal apophysis (MTA) membranous with four branches; posterior terminal apophysis (PTA) serrated. Embolus (E) with conical embolus proper (EP), short apex (AX), and thumb (TH) with a long thorn. Median

membrane (MM) leaf-shaped with finger-shaped chitinized basal part (CPM).

Female (paratype). Total length: 2.22, carapace 1.04 long, 0.86 wide, abdomen 1.20 long, 0.92 wide. Eye inter-distances and diameters: AME 0.06, AME-AME 0.03, ALE 0.09, AME-ALE 0.06, PME 0.07, PME-PME 0.07, PLE 0.09, and PME-PLE 0.06. Sternum 0.58 long, 0.55 wide. Clypeus 0.15 high. Chelicerae promargin with 3 teeth, retromargin with 5 teeth. Length of legs: I 5.95 (1.60, 0.39, 1.58, 1.42, 0.96), II 4.93 (1.36, 0.33, 1.29, 1.17, 0.78), III 3.67 (1.09, 0.28, 0.84, 0.87, 0.59), IV 4.68 (1.45, 0.28, 1.11, 1.14, 0.70). Leg formula: I-II-IV-III. TmI 0.21, TmIV absent. Tibial spine formula: 2-2-2-2. Carapace yellowish-brown. Coloration generally as in male (Fig. 15C, D).

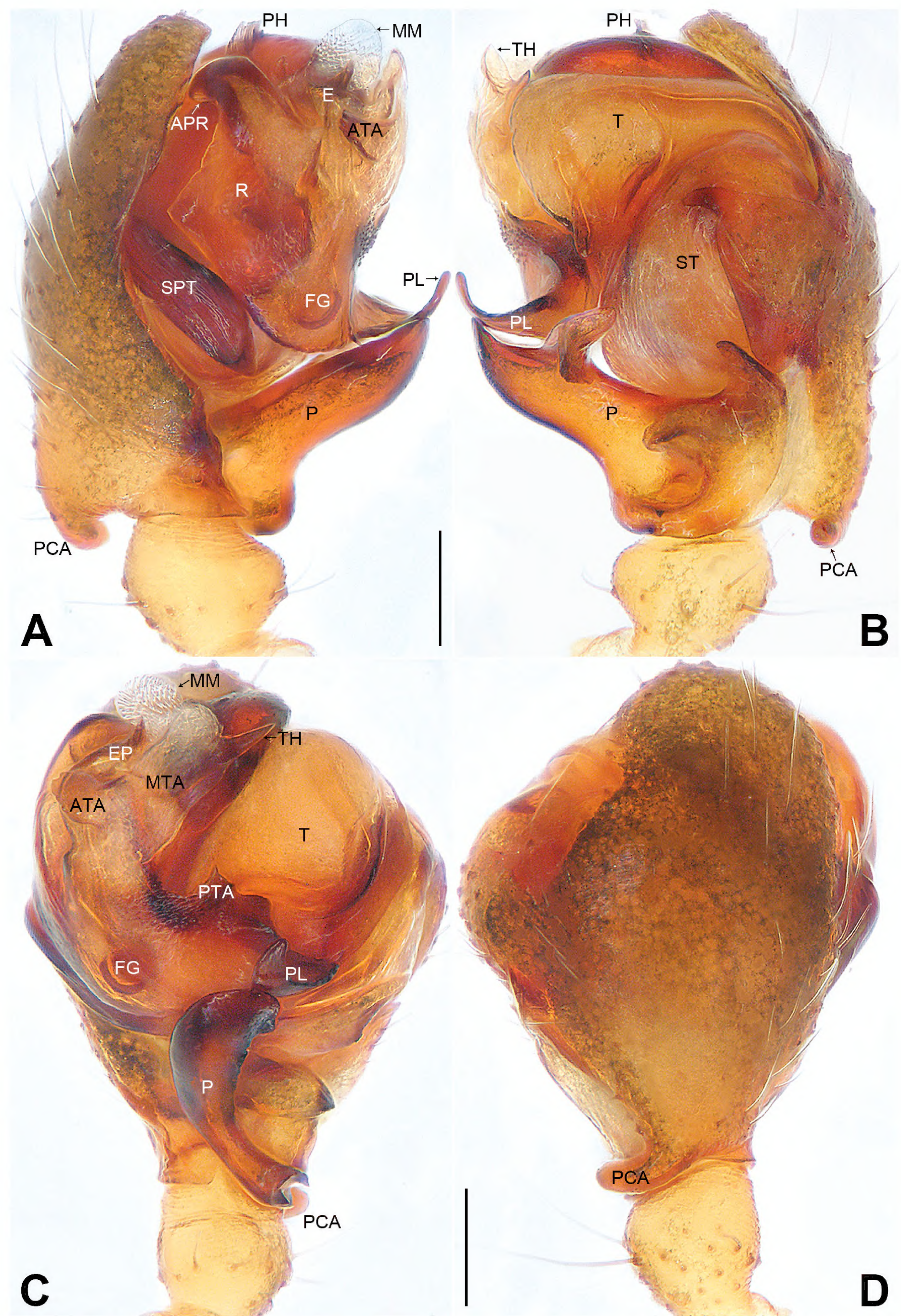


Figure 13. *Bifurcia xiaojin* sp. nov., holotype male palp: **A.** Prolateral view; **B.** Retrolateral view; **C.** Ventral view; **D.** Dorsal view. Scale bars: 0.10 mm (A–D).

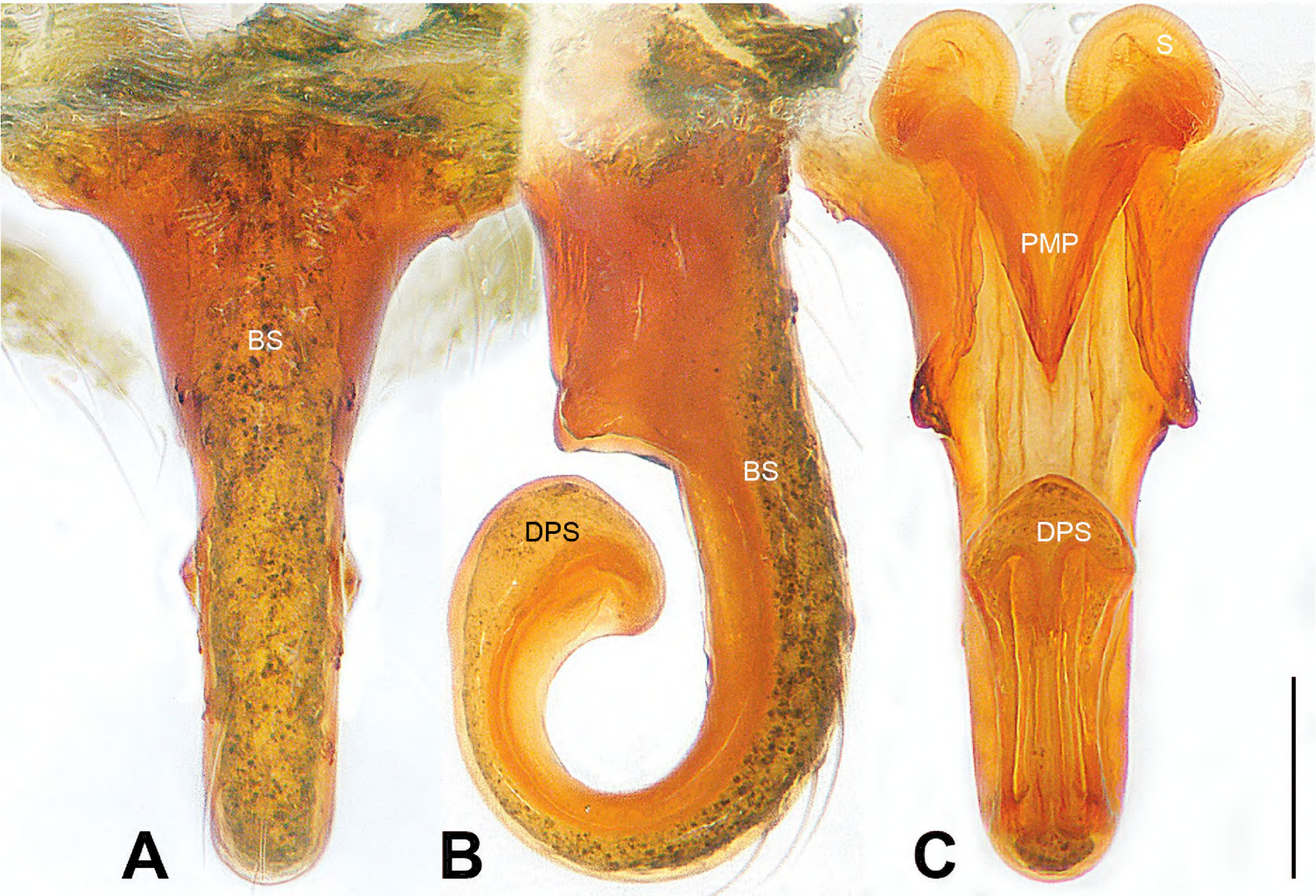


Figure 14. *Bifurcia xiaojin* sp. nov., paratype female epigyne: **A.** Ventral view; **B.** Lateral view; **C.** Dorsal view. Scale bar: 0.10 mm (A–C).

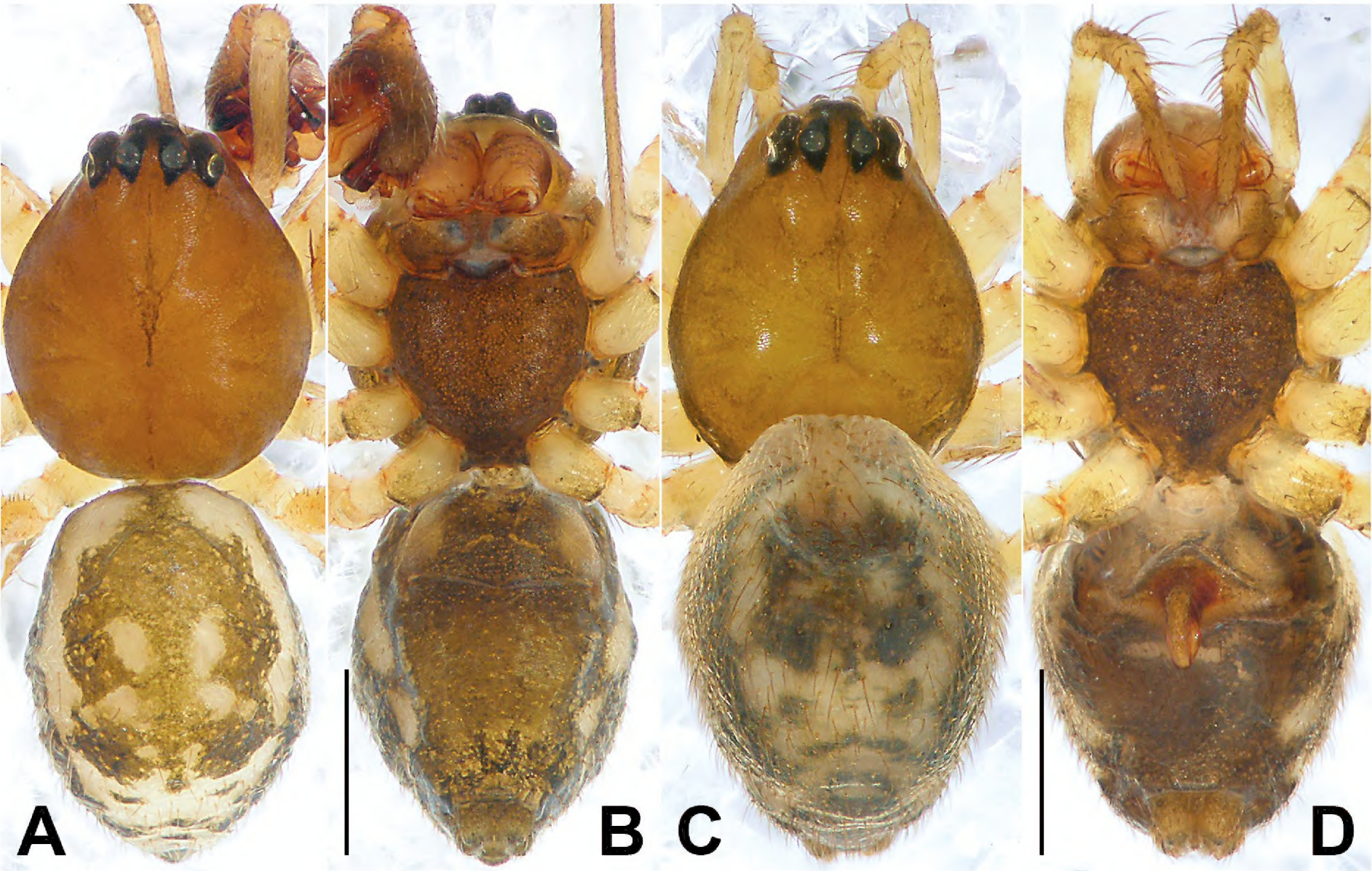


Figure 15. *Bifurcia xiaojin* sp. nov., holotype male (**A**, **B**) and paratype female (**C**, **D**) habitus: **A**, **C.** Dorsal view; **B**, **D.** Ventral view. Scale bars: 0.50 mm (A–D).

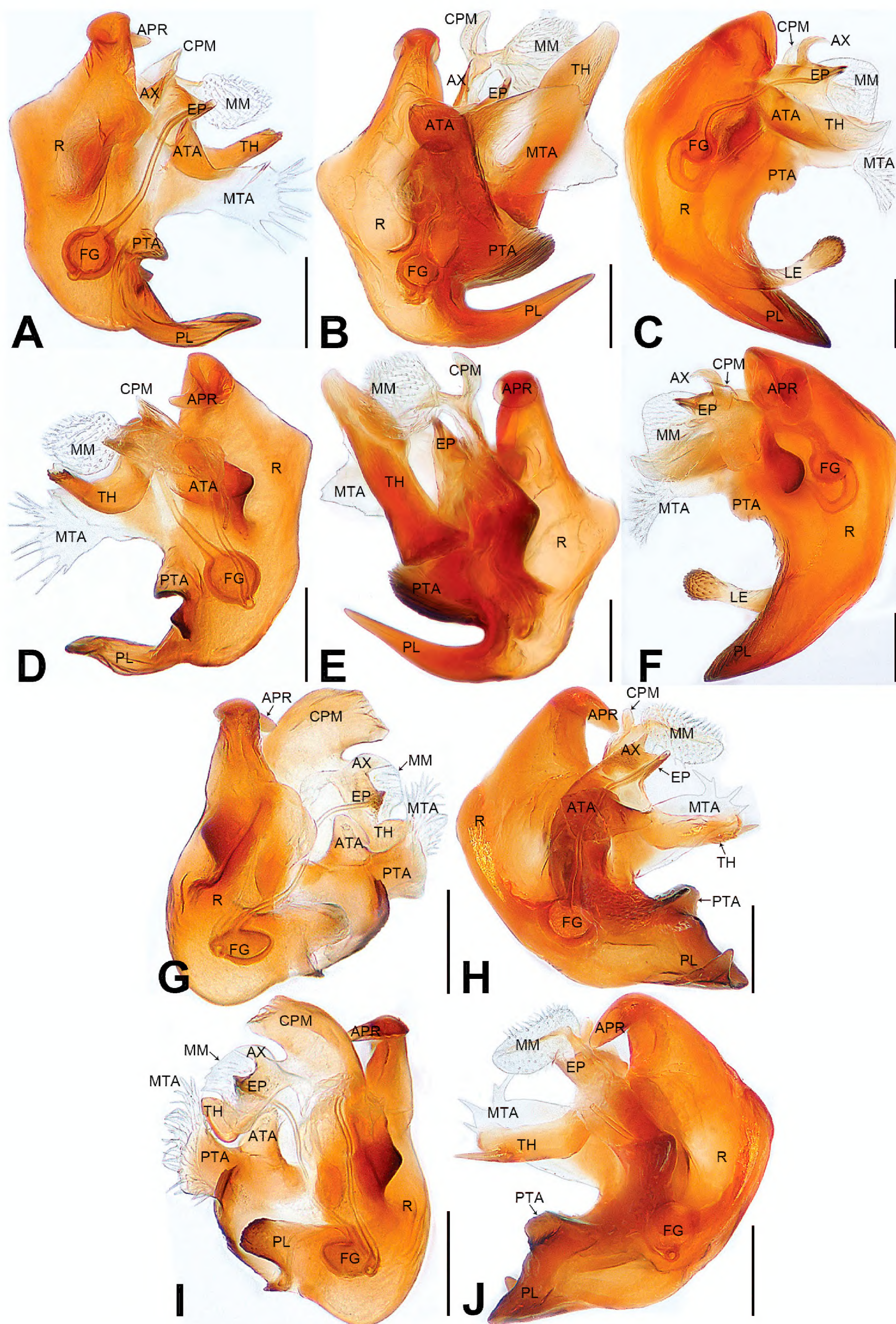


Figure 16. *Bifurcia* spp., embolic division: **A, D.** *B. kangding* sp. nov.; **B, E.** *B. labahe* sp. nov.; **C, F.** *B. luding* sp. nov.; **G, I.** *B. shuangqiao* sp. nov.; **H, J.** *B. xiaojin* sp. nov.; **A–C, G, H.** Prolateral view; **D–F, I, J.** Retrolateral view. Scale bars: 0.10 mm (A–J).

Epigyne (Fig. 14). Basal part of scape (BS) long and sparsely clothed with long, curved hairs. Posterior part of posterior median plate (PMP) M-shaped. Distal part of scape (DPS) forming a circle with basal part of scape together. Spermathecae (S) round.

Distribution. China (Sichuan, type locality; Fig. 1).

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